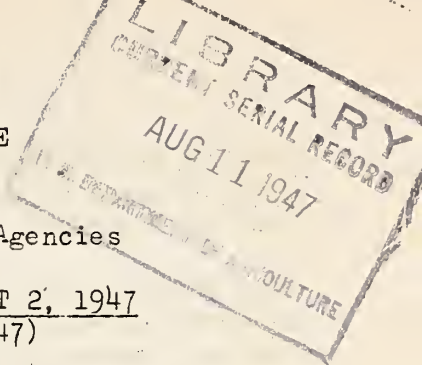


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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
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In Cooperation with State, Federal and other Agencies

COTTON INSECT CONDITIONS FOR WEEK ENDING AUGUST 2, 1947
(Tenth Cotton Insect Survey Report for 1947)

Reports from many areas emphasize the spottiness of the boll weevil infestations. There are cotton fields that are still free of boll weevils or where the infestations are so low that the use of insecticides would not be profitable, and there are also in the same counties many other fields that are heavily infested with weevils where the application of calcium arsenate dust or other insecticides against the boll weevil would mean the saving of much cotton. Every cotton grower should check on boll weevil conditions in his fields. Many growers do not realize that late applications of calcium arsenate dust are usually more profitable per application than are those made earlier in the season. Thousands of bales--probably hundreds of thousands--could now be saved by the proper application of calcium arsenate or other insecticides that are effective against the boll weevil. The weevils will destroy the cotton in many millions of bolls and locks during August unless a real fight is made to protect the crop.

Cotton leafworms were found in Burleson County on August 2. This is the fourth county in Texas from which the cotton leafworm has been reported this season. It was found in Refugio County on July 22 and in Calhoun and Nueces Counties during June.

The fall armyworm or southern grassworm (Laphygma frugiperda (A. & S.)) has been reported in damaging numbers in Mississippi, Alabama, Georgia, and South Carolina. Arsenical insecticides have long been the standard recommendation for the control of this insect.

INSECTICIDES

R. C. Gaines, Tallulah, Louisiana, reports that in Arkansas and Louisiana nicotine mixtures cannot be purchased in some areas where weevil poisoning has been required. He also reports some rotenone mixtures have been obtained in southeastern Arkansas that will be used against the cotton aphid.

J. T. Conner, Jr., Extension Entomologist, Raleigh, North Carolina, reported on August 2: "Additional supplies of calcium arsenate, chlorinated camphene, and benzene hexachloride have been received in the State during the week. It is believed that enough materials are either on hand or on the way to the State to take care of the demand, with the possible exception of chlorinated camphene."

W. A. Ruffin, Extension Entomologist, Auburn, Alabama, wrote on July 28: "At the present time we have absolutely no stocks of calcium arsenate that contains 2% nicotine. The supply of straight calcium arsenate continues to be very tight."

BOLL WEEVIL

NORTH CAROLINA: James T. Conner, Jr., Extension Entomologist, reported on August 2: "Boll weevils are very numerous in most of the counties with a very noticeable increase in the southern counties. Migration has not begun but probably will very shortly. Most all fields have plenty of squares and in

some of the fields blooms are very numerous. Cotton in the southern counties does not seem to have much set fruit. At the present the crop does not look very promising."

Boll weevils were found in all of the 131 fields examined in 21 counties. Fields with more than 50% of the squares punctured were noted in Scotland, Robeson, Sampson, Wayne, Hoke, Johnston, Edgecombe, Cumberland, Greene, Northampton, Union, Harnett, Pitt, Wilson, Halifax, and Hertford Counties. Fields with more than 25% of the squares punctured were also reported from Wake, Bertie, and Nash Counties.

SOUTH CAROLINA: Weather conditions were variable over the State during the week with scattered showers occurring at frequent intervals in some sections, especially in the Coastal Plains. The greater part of the Piedmont area has had no rain for two weeks and cotton is suffering for lack of moisture in some places. The hot, dry weather has aided in boll weevil control but conditions in that area remain critical as the cotton is still fruiting heavily in most places. In the Coastal Plains counties all cotton has passed the peak of fruiting and the boll weevil infestation in unpoisoned fields has reached the saturation level in practically all fields. Small bolls are being severely attacked by boll weevils and in undusted fields there is a very noticeable lack of mature bolls on the plants. The average boll weevil infestation in 114 fields in 19 Piedmont counties was 47% punctured squares. Some of the counties had lower infestations than the previous week due largely to hot, dry weather. More than 50% of the squares were punctured in 6 counties; in 10 counties the infestation was from 40 to 50%; and in Oconee, Union, and Spartanburg Counties the infestations averaged between 30 and 40% punctured squares.

GEORGIA: Boll weevils were found in all of the 91 fields examined in 45 counties but apparently the weevil situation is less serious than last week. In only 25 of the 91 fields examined were more than 30% of the squares punctured, and in only 13 of the fields were more than 50% of the squares punctured. In 19 fields in Berrien, Johnson, Laurens, Schley, Greene, Jackson, Lamar, Morgan, Pike, Putnam, Spalding, and Upson Counties less than 10% of the squares were punctured. Probably many of these fields with light boll weevil infestations have been dusted with calcium arsenate or other insecticides. Fields with more than 50% punctured squares were reported in Baldwin, Bleckley, Dodge, Dooley, Jenkins, Pulaski, Telfair, Tift, Wheeler, and Wilcox Counties, all in the southern part of the State.

P. M. Gilmer, Tifton, reports hot, dry weather, but a few more days of this weather would aid very much in controlling the weevils in the southern half of the State. The weevils are causing serious damage to green bolls. In the examination of 100 bolls from an unpoisoned field in Jenkins County 30 were found to be weevil damaged. Cotton prospects are reported as excellent in most areas, except for danger of damage by weevils and boll rots on the maturing bolls. Boll weevil populations are heavy but are less than was indicated earlier in the season because of hot, dry weather and widespread use of poisons for boll weevil control.

ALABAMA: W. A. Ruffin, Extension Entomologist, Auburn, wired on August 4: "33 fields of cotton examined last week in northwest Alabama. Infestation ran from 0 to 36%; average 7%. Weather has continued hot and dry for past three weeks. Indications are that this has resulted in some reduction in weevil infestation. Lice are causing serious damage in many fields all over the State."

MISSISSIPPI: Clay Lyle, Entomologist of the State Plant Board and Experiment Station, stated on August 4 that the effect of the very hot, dry weather during the past week is already evident in reduced boll weevil infestations. No weevils were found in 63 of the 276 fields examined in 38 counties, and in the 213 weevil-infested fields there was an average of only 19% punctured squares as compared to 23% last week and 37% a year ago. The average in all farms examined in the State was only 14% punctured squares, as compared to 16% last week and 31% last year. Dr. Lyle stated that the high temperatures killed many of the weevils in all parts of the State. In some fields dead weevil grubs were found in all of the fallen squares examined. Reports of fields with more than 40% punctured squares were received from Attala, Bolivar, Choctaw, Holmes, Issaquena, Lamar, Sharkey, Warren, and Yazoo Counties.

In 13 Delta counties weevils were found in 84 of the 139 fields examined. No weevils were found in the 6 fields examined in Tallahatchie County, and 7 of the 8 fields examined in Quitman County were free of weevils. On the other hand, all of the 30 fields examined in Holmes, Issaquena, Warren, and Yazoo Counties were infested with weevils—many of them with high infestations.

B. J. Young of the Delta and Pine Land Company, Scott, reported on July 31 that weevils were found in 486 of the 487 fields examined in Bolivar County, but in only 47 of the fields were more than 25% of the squares punctured and only 2 of these fields had more than 50% punctured squares. Mr. Young stated: "Weevil increasing rapidly and bollworms reported in some cuts. Am only spot dusting at present, but will have to take in considerably more in a short time."

F. F. Bibby examined 7 fields in Itawamba County in the northeastern part of the State and found that the infestations ranged from 2 to 37% punctured squares.

LOUISIANA: R. C. Gaines, Tallulah, reported on July 30: "It has been extremely hot and dry for a few days. In some fields boll weevil infestations this week are lower than they were a week ago." The average infestation in 202 fields in 16 parishes was 19% punctured squares as compared to 21% the previous week. The decrease was due to poisoning for weevil control and hot, dry weather. In 2% of the fields no punctured squares were found; in 36% of the fields the infestation was less than 10%; in 37% of the fields it was from 10 to 25%; in 19% of the fields it was from 25 to 50%; and in 6% of the fields more than 50% of the squares were punctured.

In Madison Parish, in the northeastern section of the State, general migration of weevils usually starts about the last week of July, but on account of hot, dry weather and poisoning of the heaviest infested fields weevil populations have been greatly reduced. Examinations made during the week indicated that there has not been any great movement of weevils to date.

ARKANSAS: Hot, dry weather prevailed generally throughout the State. The average weevil infestation in 6 southeastern counties was 30% punctured squares as compared to 38% the previous week. The hot, dry weather and poisoning of many of the heavily infested fields reduced weevil populations. In 14% of the fields less than 10% of the squares were punctured; in 35% of the fields the infestation was from 10 to 25%; in 33% of the fields it was from 25 to 50%; and in 18% of the fields in Drew, Ashley, Chicot, and Desha Counties more than 50% of the squares were punctured.

TEXAS: Continued hot, dry weather throughout the State has aided in reducing boll weevils. The average weevil infestation in 559 fields in 31 counties was 12% punctured squares, as compared to 40% in 1946. In Grayson, Fannin, Red River, Bowie, Lee, Colorado, and Austin Counties more than 50% of the squares were punctured in some fields.

OKLAHOMA: C. F. Stiles, Extension Entomologist, reported on August 2: "The weather over the State was extremely hot and dry during the past week. Cotton is suffering from lack of moisture in areas missed by rains of previous weeks. Especially is this true of eastern and southeastern Oklahoma. However, in spite of hot, dry weather, the boll weevil infestation remains practically the same as for the previous week. It was up in some counties and down a little in others." In 151 fields examined in 19 counties the average infestation was 17%. In 13 fields in 8 counties no weevil infestation was found; in 61 fields less than 10% of the squares were punctured; in 38 fields the infestation was from 10 to 25%; in 30 fields it was from 25 to 50%; and in 9 fields in McClain, Oklahoma, Sequoyah, Pittsburg, Bryan, and Le Flore Counties more than 50% of the squares were punctured.

COTTON LEAFWORM

TEXAS: One small cotton leafworm was found in Burleson County on the George Chance farm August 2 by H. A. Dean of the Texas Agricultural Experiment Station. This is the fourth county in Texas from which the cotton leafworm has been reported this season. It was found in Refugio County July 22 and in Calhoun and Nueces Counties during June.

BOLLWORM

ALABAMA: F. S. Arant, Alabama Polytechnic Institute, Auburn, reported on July 30 that bollworms continue to be a major problem on cotton in some sections of the State.

SOUTH CAROLINA: No reports of bollworm damage were received during the week and examinations in experimental fields at Florence showed only an occasional bollworm damaged square.

TEXAS: Bollworm infestations remain light and scattering, with only a very few fields showing heavy populations or damage.

OKLAHOMA: C. F. Stiles, Extension Entomologist, reported on August 2: "Bollworms are present in practically all cotton fields in central and eastern Oklahoma. In some fields in eastern Oklahoma, they are causing severe damage and a few farmers are dusting with a 10% DDT dust, using approximately 15 pounds per acre. Excellent results are reported."

GEORGIA: The bollworm is prevalent over much of the State, and increasing bollworm damage may be expected especially in the southern Piedmont area. Good control has been obtained by using DDT.

COTTON APHID

ALABAMA: F. S. Arant, Alabama Polytechnic Institute, Auburn, reported on July 30 that aphids continue to be a major problem on cotton in some sections of the State.

LOUISIANA: Aphids are increasing rapidly in many fields which have been dusted.

NORTH CAROLINA: Aphids are more numerous than in recent weeks.

TEXAS: Aphids continue scarce except in a few dusted fields, mostly experimental.

MISCELLANEOUS INSECTS

Fall Armyworm (*Laphygma frugiperda* (A. & S.)): F. S. Arant, Alabama Polytechnic Institute, Auburn, Alabama, reported on July 30: "We are now in the midst of

an outbreak of fall armyworms with such crops as grain sorghum and various legumes suffering very heavily." These insects often cause serious damage to cotton--the amount and extent of the damage depending, of course, upon the abundance of the insects.

On August 2, two infestations of the fall armyworm were reported on Sudan and other grasses near Florence, South Carolina.

Dr. Clay Lyle, Entomologist, Mississippi State Plant Board and Experiment Station, wired on August 4: "Worst outbreak southern grassworm (fall armyworm) in years, chiefly on young corn.

E. W. Funnam, Entomologist, Delta Branch Experiment Station, Stoneville, Miss., reported on August 1: "During the week one telephone call was received about the fall armyworm eating cotton, corn, and soybeans. Some specimens were brought in from Leflore County near Greenwood."

Garden Webworm: Joe H. Scott, Jr., County Agent, Kennett, Dunklin County, Missouri, wrote on July 29: "The garden webworm has damaged a few acres of young cotton, but it seems to prefer corn and beans that are about 3 or 4 inches high." He reported serious damage to beans, soybeans, corn, and alfalfa.

E. W. Funnam reported on August 1: "During the week several telephone calls have been received from Tallahatchie and Washington Counties about the control of garden webworms in cotton, corn, and soybeans."

Velvetbean Caterpillar (Anticarsia gemmatilis (Fbn.)): W. A. Ruffin, Extension Entomologist, wrote on July 28: "We have had only two reports of the velvetbean caterpillar in Alabama. On July 17, C. M. Ling, County Agent of Dothan, Ala., reported positive identification of one or more larvae of the velvetbean caterpillar. This insect has been found in some numbers in Baldwin County on soybeans for about 30 days. In fact, control measures in some fields have been necessary."

Joe H. Scott, Jr., County Agent, Kennett, Dunklin County, Missouri, wrote on July 29: "The red spider is beginning to show up in spots. One farmer reported red spiders in 10 acres of cotton for about a week, but the cool weather last week held them in check. He is starting to dust with sulphur today."

F. F. Bibby reported rapid plant bugs in all of 7 cotton fields examined in Itawamba County, Mississippi.

INSECTS ON IRRIGATED COTTON OF THE SOUTHWEST

ARIZONA: Stink bug populations increased on cotton in the Buckeye and Mesa areas of the Salt River Valley. As many as 24 Euschistus impictiventris per 100 net strokes were collected in the Mesa area. In the Valley as a whole the populations remained about the same as the previous week. Lygus populations were high in some fields observed, but low in fields recently dusted or sprayed for hemipterous insect control. Cotton dusting and spraying was continued on a large scale. Some spotted red spider injury was noted in the Chandler Heights and Mesa areas.

The injurious Hemiptera populations remain low in all fields that have been dusted in the Santa Cruz Valley. One isolated field in the Marana area that had not been dusted showed 18 cotton fleahoppers per 100 net strokes. Several thousand acres of cotton are being dusted in the Marana area for bollworm control. Dusting is also under way in the Sahuarita and Continental areas. Satisfactory control of the bollworm has been reported from all areas by the use of a 5% DDT-sulfur mixture applied at the rate of 20 pounds per acre.

There is still much interest in cotton insect control in Final County. It is estimated that more than 50% of the acreage has been dusted. Lygus is still the predominating species but stink bugs are present in damaging numbers in a few fields. The cotton leaf perforator is also appearing in damaging numbers in some areas.

NEW MEXICO: The injurious Hemiptera populations, principally Lygus and cotton flea-hoppers, increased in many areas, especially in Eddy County. Dusting is now general and most of the cotton in Eddy County will be dusted with a 5% DDT-sulfur mixture. Some dusting is in progress in Dona Ana County. It is reported that the county agent has recommended control measures in a number of fields. Sweepings made in 19 fields showed the injurious insect population to be low, ranging from 0 to 7 per 100 net strokes.

TEXAS: Injurious Hemiptera populations on cotton continued to increase in the El Paso Valley in fields that have not been poisoned. The weekly sweeping records made in 10 study fields showed a decrease in insect populations as a result of poison applications in some of the fields. The average injurious insect populations in 46 fields in El Paso and Hudspeth Counties was 21 per 100 net strokes. The average populations ranged from 4 to 40 injurious species per 100 net strokes. Lygus continued to predominate. Stink bugs are increasing but have not as yet appeared in sufficient numbers to be serious. More cotton growers in the El Paso Valley are poisoning their cotton for hemipterous insect control than ever before. A small brown beetle, Colaspis spp., has occurred in large numbers in the western part of El Paso County but appears not to be causing economic damage.

CALIFORNIA: Gordon L. Smith, Entomologist, California Agricultural Experiment Station, reported on July 20 in regard to cotton insect conditions in the San Joaquin Valley as follows: "During late June and early July when potatoes were being harvested in Kern County, cotton fields were being irrigated for the first time and Lygus bugs were attracted more into the most succulent fields or even the parts of fields where the growth was most vigorous. Many growers used insecticides containing 5% DDT and 50 to 85% sulfur either for control or protection against an infestation. Many fields were treated where less than an average of six Lygus bugs could be swept from fifty tops. (Fifty sweeps through one row are used as a standard for each sample). The cutting of alfalfa adjacent to cotton made it necessary to dust again after a 10 day to two week period, but in most cases good control was maintained over three to four weeks. Where the DDT and sulfur mixes have been used, none of the common California cotton insects has become a serious pest.

"During July Lygus bugs have become numerous enough for control with DDT and sulfur in the eastern and southern parts of the San Joaquin Valley. The northwest part of the Valley and the west and central Valley have only 2-3 Lygus bugs per 50 tops of cotton. A few scattered fields in the north central cotton growing part of the Valley have the minimum number for which dusting is recommended (six per 50 tops).

"Red spiders - Tetranychus atlanticus McG mostly are becoming serious in many fields which have not had sulfur applied during the season.

"The cotton aphid has been rather more persistent in small spotted infestation than in most years previous.

"Bollworm - Very small worms have been found during mid-July in widely scattered areas in fields which have not had applications of DDT within the past three weeks.

"The yellow-striped armyworm, Prodenia praefica Grote, has migrated from alfalfa into cotton. Applications of DDT in infested spots have been effective.

"The bean thrips, Hercothrips fasciatus (Perg.), which is usually a rather serious pest of cotton on the heavier soils in the west San Joaquin Valley is just starting to show some injury. One localized area west of Tulare Lake shows enough injury for control measures to be taken."